Controlling RESPIRATORY DISEASES Of Swine

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EACH YEAR, PRODUCERS SUFFER HEAVY ECONOMIC LOSS from the respiratory-disease complex in swine. The disease complex results from the interaction of atrophic rhinitis, chronic mycoplasmal pneumonia, secondary bacterial invasion, parasites, influenza, and climatic extremes. This publication is designed to help pork producers and their veterinarians in controlling each contributor to the complex.

Atrophic Rhinitis

Atrophic rhinitis is a disease affecting young pigs. It is commonly caused by the bacterium *Bordetella bronchiseptica,* and is usually transmitted from infected gilts to their baby pigs. The signs of the disease include sniffling and sneezing, and occasional irritation of the eyes. Several researchers believe that pigs affected with rhinitis are more susceptible to pneumonia.

The disease causes a decrease in the normal filtration, warming, and moistening of inspired air. In severe rhinitis, the nose is deviated to one side or abnormally curved upward. The active disease usually lasts about three months.

The following recommendations will help you control atrophic rhinitis caused by Bordetella:

1. *Maintain an old sow herd.* As sows get older, they usually eliminate Bordetella organisms, thus reducing the chances of spreading the infection to their baby pigs.

2. *Add sulfonamides to the ration.* Although there is evidence that Bordetella is becoming resistant to sulfonamides, they are still the only bacterials that reach the nasal secretions in sufficient quantities to be effective.

3. *Eliminate carriers of the organism.* Swine carriers can be identified by swabbing the nasal cavities of adult swine and culturing the organisms. For accurate culturing, nasal swabs must reach the laboratory within three hours after being taken from the live animal. Do not expose swine to other carriers of Bordetella (dogs, cats, and rats).

4. *Depopulate, cleanup, and purchase stock from an SPF laboratory.*

Mycoplasmal Pneumonia

Chronic pneumonia, once called "virus pig pneumonia" (VPP), is now known to be caused by *Mycoplasma hyopneumoniae.* Mycoplasma organisms are less correctly referred to as PPLO. Most surveys indicate

that the lungs of about one-half of all "normal" market swine are affected by mycoplasmal pneumonia. In most field outbreaks, mycoplasmal pneumonia is complicated by bacterial invasion, parasites, influenza, and climatic extremes, and the resulting respiratory-disease complex can greatly reduce feed efficiency and growth rate.

Mycoplasmal pneumonia can be prevented by eliminating the organisms from the herd through depopulation, cleanup, and the purchase of SPF stock. No non-swine carriers of *Mycoplasma hyopneumonia* have been identified. Tetracyclines are the only antibacterial compounds effective against *Mycoplasma hypopneumonia,* and their effectiveness is limited. The economic losses caused by mycoplasmal pneumonia can be reduced by minimizing the secondary infections.

The most severe complication of mycoplasmal pneumonia is the bacterium *Pasteurella multocida.* In the presence of mild mycoplasmal pneumonia, *P. multocida* becomes highly invasive and multiplies rapidly. Signs of Pasturella complications of mycoplasmal pneumonia include temperature elevation, depression, and severe coughing. This condition is commonly called "flu" by many producers. In herds with recurring pneumonia outbreaks, the use of a Pasteurella bacterin in six- to eight-week-old pigs appears to be effective.

Parasitic Pneumonia

Parasitic pneumonia is caused by migrating ascarid larvae and by several species of lungworms. The parasitic infection may be severe enough to cause primary pneumonia, but more often it aggravates other pneumonia diseases.

As with other parasitic diseases, control of ascarids and lungworms is based on interrupting the life cycle. Since ascarid eggs require several weeks to become infective, periodic cleanup greatly reduces the chances of the pigs consuming infective eggs. Dichlorvos and piperazine are effective drugs for breaking the ascarid life cycle. Since ascarid eggs can survive in the soil for several years, pasture rotation is valuable only when the interval between pasturing is two years or more. A potentially serious ascarid problem can arise when previously confined breeding swine are placed on pasture or drylots and exposed to heavy concentrations of ascarid eggs. Because of low immunity to ascarids, the resulting infection may be severe.

Lungworms can be controlled by reducing exposure of swine to earthworms, the intermediate host of lungworms, through the use of concrete floors.

Influenza Pneumonia

The most common virus pneumonia of swine is influenza. An explosive onset is characteristic of this disease. Affected pigs often cough violently, have greatly reduced appetites and become depressed. Positive diagnosis requires blood testing.

Lungworms and earthworms are known reservoirs of influenza. Although confinement and the use of concrete floors reduce the exposure of swine to these hosts, confined pigs occasionally have influenza.

Climatic Extremes

Environment also appears to be a significant contributing factor in the swine respiratory-disease complex. One recent study, for example, showed that the prevalence of pneumonia was higher in pigs moved to new housing when they reached 100 pounds than in control animals that remained in the same facilities. In the same study, pigs in close confinement and those in environmentally controlled buildings seemed to have more pneumonia problems than those in less crowded openfronted buildings.

Although the influence of climate and other environmental factors on swine-respiratory problems is still not well understood, experience indicates that dry, draft-free conditions are most satisfactory.

Slaughter Inspection

The best method of assessing respiratory diseases is a semiannual slaughter inspection. By having your veterinarian inspect at least 10 pigs twice each year, you can get valuable information on the respiratory diseases affecting your herd. With this information, you and your veterinarian can embark on an appropriate respiratory disease-control program that can pay big dividends.

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